CLAIMS:

What is claimed is:

1. A method in a data processing system for generating coverage data for accesses to data during execution of code in the data processing system, the method comprising:

responsive to executing an instruction in the code at a processor in the data processing system, determining whether an access to a memory location associated with a data access indicator has occurred; and

changing a state of the access indicator by the processor when the instruction is executed, if the data access indicator is associated with the memory location, wherein coverage data is generated during execution of the code by the processor.

2. The method of claim 1, wherein the changing step comprises:

receiving a signal at a data cache in the processor from a completion buffer in the processor; and

responsive to receiving the signal, changing the state of the access indicator by the data cache.

3. The method of claim 1, wherein the access indicator is located in a field in the instruction.

4. The method of claim 1, wherein the access indicator associated with the instruction is located in a shadow memory.

5. The method of claim 1, wherein the access indicator associated with the instruction is located in a page table.

6. The method of claim 1, wherein the memory location accessed during the execution of the code have set data access indicators when the state of the access indicators associated with the executed instruction are changed, while the memory location unaccessed during the execution of the code have unset data access indicators because the state of the unset data access indicators remain unchanged.

7. The method of claim 1, wherein data access indicators are associated with every memory location within the code.

8. The method of claim 1, wherein data access indicators are associated only with selected memory locations.

9. The method of claim 1, wherein the memory location is at least one of a byte, a word, and a double word.

10. A data processing system for generating coverage data, the data processing system comprising:

a data cache, wherein the data cache marks a memory location as being accessed in response to receiving a signal that data in the memory location has been accessed during execution of an instruction; and

a processing unit, wherein the processing unit generates the signal in response to execution of the instruction that include access to the data in the memory location.

11. The data processing system of claim 10, wherein the data cache sets a data access indicator associated with the memory location to mark the memory location as being accessed.

12. The data processing system of claim 11, wherein the processor unit is one of a completion buffer, a processor execution unit executing the instruction, or a dispatcher.

13. A data processing system for generating coverage data for accesses to data during execution of code in the data processing system, the data processing system comprising:

determining means, responsive to executing an instruction in the code at a processor in the data processing system, for determining whether an access to a memory location associated with a data access indicator has occurred; and

changing means for changing a state of the access indicator by the processor when the instruction is executed, if the data access indicator is associated with the memory location, wherein coverage data is generated during execution of the code by the processor.

14. The data processing system of claim 13, wherein the changing means comprises:

receiving means for receiving a signal at a data cache in the processor from a completion buffer in the processor; and

means, responsive to receiving the signal, for changing the state of the access indicator by the data cache.

15. The data processing system of claim 13, wherein the access indicator is located in a field in the instruction.

16. The data processing system of claim 13, wherein the access indicator associated with the instruction is located in a shadow memory.

17. The data processing system of claim 13, wherein the access indicator associated with the instruction is located in a page table.

18. The data processing system of claim 13, wherein the memory location accessed during the execution of the code have set data access indicators when the state of the access indicators associated with the executed instruction are changed, while the memory location unaccessed during the execution of the code have unset data access indicators because the state of the unset data access indicators remain unchanged.

19. The data processing system of claim 13, wherein data access indicators are associated with every memory location within the code.

20. The data processing system of claim 13, wherein data access indicators are associated only with selected memory locations.

21. The data processing system of claim 13, wherein the memory location is at least one of a byte, a word, and a double word.

22. A computer program product in a computer readable medium for generating coverage data for accesses to data during execution of code in the data processing system, the computer program product comprising:

first instructions, responsive to executing an instruction in the code at a processor in the data processing system, for determining whether an access to a memory location associated with a data access indicator has occurred; and

second instructions for changing a state of the access indicator by the processor when the instruction is executed, if the data access indicator is associated with the memory location, wherein coverage data is generated during execution of the code by the processor.

23. The computer program product of claim 22, wherein the second instructions comprises:

first sub-instructions for receiving a signal at a data cache in the processor from a completion buffer in the processor; and

second sub-instructions for responsive to receiving the signal, changing the state of the access indicator by the data cache.

24. The computer program product of claim 22, wherein the memory location accessed during the execution of the code have set data access indicators when the state of the access indicators associated with the executed instruction are changed, while the memory location unaccessed during the execution of the code have unset data access indicators because the state of the unset data access indicators remain unchanged.